

AMENDMENT TO THE SPECIFICATION:

Please replace the identified paragraphs with the following replacement paragraphs:

The section heading at page 22, line 1,

Example 4: Metal deposition using electroless deposition

The section heading at page 23, line 3,

Part 3: Deposition - irradiation

The section heading at page 29, line 1,

Part 6: Deposition of optically transparent and opaque materials

The section heading at page 32, lines 1-2,

Part 7: Repair of advanced (PSM) photomasks and Next-Generation Lithography Masks

The paragraph bridging pages 8-9,

It is another object of the invention to provide methods (xxvi) to enhance a mask made by conventional methods with features otherwise difficult to fabricate, [[for example]] (xxvii) [[to]] by addition of OPC (optical [[phase]] proximity correction) features. It is known that image fidelity issues with optical pattern generators limit their usefulness for the patterning of high-density features and sub-resolution OPC features, such as scattering bars. DPN™ patterning with parallel probe arrays may compete effectively with e-beam direct writing, in term of overall costs and throughput, for the fabrication of wavefront engineering features, such as OPC and PSM features.

Paragraph bridging pages 15-16:

Figure 3 provides an additional schematic diagram of a possible additive/subtractive photomask-repair apparatus. It is possible to simultaneously or sequentially repair both clear and opaque defects with the same instrument in the same session, if combining DPN™ printing technology with nanomachining and/or DPN™ printing-assisted nanomachining. An array of two active microfabricated cantilevers is brought in close proximity with the photomask wafer (1), for example by monitoring the cantilever deflection during approach. The defect (2) to repair is located e.g. by a combination of actinic optical microscopy and low-force, high-speed SPM imaging of the wafer associated with pattern recognition software. The left probe (3) is supplied with and coated with an ink, while the right one, a high-force-constant cantilever, capable of applying high contact force and/or delivering a second ink can [[and can]] serve as a nanomilling tool. The cantilevers can be individually actuated, e.g. by the thermal expansion of a bimorph formed by a metallic heater on the back of the cantilever and the structural material of the cantilever itself. In the additive repair mode [A], probe 3 is brought in contact with the substrate and rastered at slow speeds to fill the clear defect area. In the subtractive repair mode [B], probe 4 applies a large force to areas where spurious metal has been deposited in order to scrape it. Or probe 4 can remove spurious metal by rastering multiple times the area to scrape it. The probe 4 may be optionally coated with an ink (5) that serves as a lubricant and/or etchant during nanofabrication and nanomachining (hence, it can be a DPN™ printing-assisted nanomachining).